SOLVAY

Dean, Ouisha <ouisha.dean@solvay.com>

FW: Message from KMBT_C253

3 messages

Tim Martin <tmartin@airsci.com> Fri, Mar 23, 2012 at 1:36 PM
To: "Toenyes, Ouisha" <ouisha.toenyes@solvay.com>

Ousiha,

Please see page 4 of the attached December 18, 2009 permit application (AP-10253) for the flare exit velocity of 52.9 m/sec that we discussed on the phone.

-Tim

From: portland@airsci.com [mailto:portland@airsci.com]
Sent: Friday, March 23, 2012 2:28 PM
To: tmartin@airsci.com
Subject: Message from KMBT_C253

Sportland p12032311270.pdf
3863K

Toenyes, Ouisha <ouisha.toenyes@solvay.com> Fri, Mar 23, 2012 at 2:00 PM
To: Tim Martin <tmartin@airsci.com>

Tim,

Thanks for scanning that permit. Also, I did forget to tell you that I was told by the mine department that the Katolight Generator does have an exit velocity of 940 degrees Fahrenheit.

-Ouisha

[Quoted text hidden]

–
Ouisha Toenyes
Environmental Engineer
(307) 872 - 6571
ouisha.toenyes@solvay.com

Tim Martin <tmartin@airsci.com> Fri, Mar 23, 2012 at 2:10 PM
To: "Toenyes, Ouisha" <ouisha.toenyes@solvay.com>

Ouisha,

Thanks for the additional information in the Katolight. I'll incorporate this informaton into the roster workbook and will send a copy back to you for your records when we make the estimates on the remaining missing information. If for some reason information does become available for E4, E5, the Katolight, and the reboilers, please send it along. Otherwise, we will be working with the data limitations on this end.

Have a good weekend.

-Tim

From: Toenyes, Ouisha [mailto:ouisha.toenyes@solvay.com]
Sent: Friday, March 23, 2012 1:00 PM
To: Tim Martin
Subject: Re: FW: Message from KMBT_C253

[Quoted text hidden]

--

--

Department of Environmental Quality

Division of Air Quality

Permit Application

Date of Application: **December 18, 2009**

1. Company Name: **Solvay Chemicals, Inc.**

2. Mailing Address: **P.O. Box 1167 (400 County Rd 85)**
Green River, Sweetwater County, Wyoming 82935
(307) 875-6500

3. Plant Location: **NE ¼ of Section 31, Township 18 North, Range 109 West**
Sweetwater County, Wyoming (307) 875-6500

4. Name of Owner or company official to contact regarding air pollution matters:
Ronald O. Hughes Senior Vice President – Site Manager
P.O. Box 1167 Green River, Wyoming 82935
(307) 875-6500

5. General nature of business: **Trona mine and refinery, producing soda ash and other sodium-based products**

6. Permit application is made for:

__X__ New construction ____ Modification

_____ Relocation _____ Operation

7. Type of equipment to be constructed, modified, or relocated. (Please list each major piece of equipment separately.)

2 Mine Vent Gas powered engines
Mine Vent Gas flare
Mine Vent Gas compressor

8. If application is being made for operation of an existing source in a new location, list previous location and new location: **N/A**

Previous location: _____

New location:

9. If application is being made for a crushing unit, is there: **No open crushing**

Primary crushing	Control equipment
Secondary crushing	Control equipment
Tertiary crushing	Control equipment
Recrushing & Screening	Control equipment

Conveying	Control equipment
Drying	Control equipment
Other	Control equipment

Proposed dates of operation (month/year) **Operations are scheduled to commence immediately upon issuance of permit.**

10. Materials used in unit or process (include solid fuels):

Type of Material	Process Weight Average (lb/hr)	Process Weight Maximum (lb/hr)	Quantity/Year (tons/year)

11. Air contaminants emitted:

Emission Point	Pollutant	lb/hr	ton/yr	Basis of Data
75 HP Engine	NOx	0.17	0.74	Manufacturer Guarantee
	CO	0.17	0.74	Manufacturer Guarantee
	VOC	0.08	0.35	Manufacturer Guarantee
145 HP Engine	NOx	0.32	1.40	Manufacturer Guarantee
	CO	0.32	1.40	Manufacturer Guarantee
	VOC	0.16	0.70	Manufacturer Guarantee
Mine Vent Gas Compressor	NOx	0.88	3.85	Manufacturer Guarantee
	CO	0.88	3.85	Manufacturer Guarantee
	VOC	0.44	1.93	Manufacturer Guarantee
Mine Vent Gas Flare	NOx	5.86	25.67	Manufacturer Guarantee
	CO	3..42	14.98	Manufacturer Guarantee
	VOC	0.82	3.61	Manufacturer Guarantee

12. Air contaminant control equipment:

Emission Point	Type	Pollutant Removed	Efficiency
75 HP Engine	AFR Controller NSCR Catalyst	NOx	74%
145 HP Engine	AFR Controller NSCR Catalyst	NOx	91%
Mine Vent Gas Compressor	AFR Controller NSCR Catalyst	NOx	*
Mine Vent Gas Flare	Low NOx Burners	NOx	57%
Mine Vent Gas Flare	Flare	VOC	99.0%

* Efficiency for the Mine Vent Gas Compressor will be submitted under separate cover once compressor has been ordered.

13. Type of combustion unit: (check if applicable) :

A. Coal _____

1. *Pulverized* _____:

General _____; Dry Bottom _____; Wet Bottom _____; With Flyash Reinjection_____;
Without Flyash Reinjection _____; Other_____

2. *Spreader Stoker* _____:

With Flyash Reinjection_____; Without Flyash Reinjection _; Cyclone_____ ;
Hand-Fired _____ ; Other _____

B. Fuel Oil_____

Horizontally Fired _____; Tangentially Fired _____;

C. Natural Gas _____

D. If other, please specify **Mine Vent Gas**

Hourly fuel consumption (estimate for new equipment)

Size of combustion unit _____ BTU heat input/hour

14. Operating Schedule: __24__ hours/day; __7__ days/week; __52__ weeks/year.

Peak production season (if any): __None__

15. Fuel analysis:

	A. Coal	B. Fuel Oil	C. Natural Gas
% sulfur			0.0
% ash			0.0
BTU Value			944 BTU/SCF

16. Products of process or units:

Products	Quantity/Year

17. Emissions to the atmosphere (each point of emission should be listed separately and numbered so that it can be located on the flow sheet):

Emission Point	Stack Height (ft)	Stack Diameter (ft)	Gas Discharged DSCFM (ACFM)	Exit Temp (°F)	Gas Velocity (ft/s)
Zenith	6.5	0.16	102 (578)	1420	479
Caterpillar	8.5	0.33	157 (643)	1063	380
Compressor Engine	This information will be submitted under separate cover.				
Flare	22	8.5	28,046 (180,328)	1800	52.9

*Emissions for the Compressor Engine will be submitted under separate cover once compressor has been ordered.

18. Does the input material or product from this process or unit contain finely divided materials which could become airborne?

___ Yes __X__ No

Is this material stored in piles or in some other way as to make possible the creation of dust problems?

___ Yes _X_ No

List storage piles (if any):

Type of Material	Particle Size (Diameter or Screen Size)	Pile Size (Average Tons on Pile)	Pile Wetted (Yes or No)	Pile Covered (Yes or No)

19. Using a flow diagram:
(1) Illustrate input of raw materials.

(2) Label production processes, process fuel combustion, process equipment, and air pollution control equipment.

(3) Illustrate locations of air contaminant release so that emission points under items 11, 12 and 17 can be identified. For refineries, show normal pressure relief and venting systems. Attach extra pages as needed. Attach extra pages as needed.

20. A site map should be included indicating the layout of facility at the site. All buildings, pieces of equipment, roads, pits, rivers and other such items should be shown on the layout.

21. A location drawing should be included indicating location of the facility with respect to prominent highways, cities, towns, or other facilities (include UTM coordinates).

Certification

"I certify to the accuracy of the plans, specifications, and supplementary data submitted with this application. It is my opinion that any new equipment installed in accordance with these submitted plans and operated in accordance with the manufacturer's recommendations will meet emission limitations specified in the Wyoming Air Quality Standards and Regulations."

Signature R. Hughes

Typed Name **Ronald O. Hughes**

Title **Senior Vice President – Site Manager**

Company **Solvay Chemicals, Inc.**

Mailing Address **P.O. Box 1167, Green River, Wyoming 82935**

Telephone **(307) 875-6500**

P.E. Registration (if applicable) **N/A**

State where registered

GVBH Emission Calculations

GVBH Engine 75 hp

	g/bhp-hr	lb/hr	ton/yr	1 engine(s)
NOx	1	0.17	0.74	0.74
CO	1	0.17	0.74	0.74
VOC	0.5	0.08	0.35	0.35

GVBH Engine 145 hp

	g/bhp-hr	lb/hr	ton/yr	1 engine(s)
NOx	1	0.32	1.40	1.40
CO	1	0.32	1.40	1.40
VOC	0.5	0.16	0.70	0.70

Flare 2,200 ACFM 1,725 SCFM 944 BTU/SCF
97.7 MMBTU/h

	lb/MMBTU	lb/hr	ton/yr	1 flare(s)	
NOx	0.06	5.86	25.67	25.67	
CO	0.035	3.42	14.98	14.98	
VOC	0.008	0.82	3.61	3.61	99% destruction

Compressor Engine 400 hp

	g/bhp-hr	lb/hr	ton/yr	1 engine(s)
NOx	1	0.88	3.85	3.85
CO	1	0.88	3.85	3.85
VOC	0.5	0.44	1.93	1.93

Total project ton/yr	
NOx	31.67
CO	20.98
VOC	14.71

adding 2.25 % of 361 t for venting GVB

*Emission factors are Manufacturer Guaranteed emissions.

STATE OF WYOMING
Department of Environmental Quality - Air Quality Division
Permit Application

Reciprocating Engine Form

GENERAL INFORMATION

Company Name: Solvay Chemicals, Inc

Facility Name: Solvay Chemicals, Inc

ENGINE DATA

Manufacturer: Zenith

Model: 520-4

No. of Cylinders: 6

Compression Ratio: ____

Serial Number: SOL07-01

Date Ordered: ____

Date Manufactured: 3/21/07

Type of Engine:

4 Stroke Cycle: X 2 Stroke Cycle: ____

Fuel Data:

Coal Bed Methane ____ Other: X

Engine Fuel Consumption (BTU/bhp-hr): ____

Fuel Gas Heating Value (BTU/scf) ____

	Nameplate	Site Rating	Operating Range
Horsepower:	75		max 75
Speed (rpm):	1800		

Exhaust Stack **Height (m):** 1.98 **Diameter (m):** 0.05 **Temp. (K):** 1044 **Velocity(m/s):** ____

(Note units)

EMISSIONS DATA

NO_X		CO		VOC		HCHO	
g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr
1		1		0.5			

Annual Operating Hours: 8760

EMISSION CONTROL EQUIPMENT

Lean Burn: ____ **NSCR Catalyst:** X **AFR controller:** X **SCR Catalyst:** ____

Oxidation Catalyst: ____ **Other:** ____ **Describe:** ____

Best Available Control Technology control cost analysis attached: yes X **no** ____

ADDITIONAL INFORMATION REQUIRED

On separate sheets of paper, attach a copy of engine manufacturer's site rating, site emission estimates, general rating specification for engine model, and documentation of date of order and date of manufacture for each engine.

STATE OF WYOMING
Department of Environmental Quality - Air Quality Division
Permit Application

Reciprocating Engine Form

GENERAL INFORMATION

Company Name: Solvay Chemicals, Inc

Facility Name: Solvay Chemicals, Inc

ENGINE DATA

Manufacturer: Caterpillar

Model: G3306

No. of Cylinders: 6

Compression Ratio: 10:5:1

Serial Number: G6X05631

Date Ordered:

Date Manufactured: 11/2008

Type of Engine:

4 Stroke Cycle: X 2 Stroke Cycle:

Fuel Data:

Coal Bed Methane: Other: X

Engine Fuel Consumption (BTU/bhp-hr): 7775

Fuel Gas Heating Value (BTU/scf):

	Nameplate	Site Rating	Operating Range
Horsepower:	145		max 150
Speed (rpm):	1800		

Exhaust Stack Height (m): 2.6 Diameter (m): 0.10 Temp. (K): 846 Velocity(m/s): 116

(Note units)

EMISSIONS DATA

NO_X		CO		VOC		HCHO	
g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr	g/hp-hr	lb/hr
1		1		0.5			

Annual Operating Hours: 8760

EMISSION CONTROL EQUIPMENT

Lean Burn: NSCR Catalyst: X AFR controller: X SCR Catalyst:

Oxidation Catalyst: Other: Describe:

Best Available Control Technology control cost analysis attached: yes no X

ADDITIONAL INFORMATION REQUIRED

On separate sheets of paper, attach a copy of engine manufacturer's site rating, site emission estimates, general rating specification for engine model, and documentation of date of order and date of manufacture for each engine.